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File Number 58027-01100 (US. Ser. #: 10/060,737)

Comments

Proposed claim amendment.

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Po-Hao Adam Huang et al	Examiner:	Leung, Jennifer A
Serial No.	10/060,737	Group Art Unit:	1764
Filed:	01/30/2002	Docket No.:	58027-011100
Title:	CONTROL DEVICES FOR EVAPORATIVE CHEMICAL MIXING/REACTION		

FOR DISCUSSION PURPOSES ONLYPROPOSED AMENDMENTS TO CLAIM 1

Claim 1 (proposed amendment). A system for mixing and combusting chemicals in a micro-machined chemical-mixing device, the system having [A micro-machined chemical-mixing device]:

walls of the device forming a chamber having an outlet;

an evaporator adjacent the chamber for evaporating a fluid reactant supplied through a non-pressurized inlet and introducing the evaporated fluid reactant into the chamber;

a feed path for supplying the fluid reactant to the evaporator;

an initiator for igniting the evaporated fluid reactant in the chamber;

first inlet for introducing a non-pressurized oxidizer into the chamber for forming a mixture of the evaporated fluid and the oxidizer;

the initiator providing energy to combust the mixture of the evaporated fluid and the oxidizer, thereby sending a pressure wave through an outlet;

the combustion of the evaporated fluid generating an acoustic wave, said acoustic wave being used to draw the oxidizer from the first inlet into the chamber;

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a subsequent combustion being provided by a wavefront of the acoustic wave, after the device achieves operational temperature and operational acoustic frequency; and
wherein the evaporator includes a membranous pad having a plurality of patterned holes and grooves for increasing surface adhesion of the non-pressurized fluid reactant and flow of the fluid.

Claim 1 (proposed amendment). A method for mixing and combusting chemicals in a micro-machined chemical-mixing device having:

- walls of the device forming a chamber having an outlet;
- an evaporator adjacent the chamber for evaporating a fluid reactant supplied through a non-pressurized inlet and introducing the evaporated fluid reactant into the chamber;
- a feed path for supplying the fluid reactant to the evaporator;
- an initiator for igniting the evaporated fluid reactant in the chamber;
- first inlet for introducing a non-pressurized oxidizer into the chamber for forming a mixture of the evaporated fluid and the oxidizer;
- wherein the evaporator includes a membranous pad having a plurality of patterned holes and grooves for increasing surface adhesion of the non-pressurized fluid reactant and flow of the fluid;
- said method including the steps of:
 - providing energy by the initiator to combust the mixture of the evaporated fluid and the oxidizer, thereby sending a pressure wave through an outlet;
 - generating an acoustic wave by combusting the evaporated fluid, said acoustic wave being used to draw the oxidizer from the first inlet into the chamber; and
 - providing a subsequent combustion by a wavefront of the acoustic wave after the device achieves operational temperature and operational acoustic frequency.

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Claim 1 (proposed amendment). LA-FS1\315846v01 A method for mixing and combusting chemicals in a micro-machined chemical-mixing device having walls of the device forming a chamber with an outlet, the method comprising the steps of:

evaporating a fluid reactant supplied through a non-pressurized inlet by an evaporator adjacent the chamber;

introducing the evaporated fluid reactant into the chamber;

supplying the fluid reactant to the evaporator by a feed path;

igniting the evaporated fluid reactant in the chamber by an initiator;

introducing a non-pressurized oxidizer via a first inlet into the chamber;

forming a mixture of the evaporated fluid and the oxidizer;

providing energy by the initiator to combust the mixture of the evaporated fluid and the oxidizer, thereby sending a pressure wave through an outlet;

generating an acoustic wave by combusting the evaporated fluid, said acoustic wave being used to draw the oxidizer from the first inlet into the chamber;

providing a subsequent combustion by a wavefront of the acoustic wave after the device achieves operational temperature and operational acoustic frequency; and

wherein the evaporator includes a membranous pad having a plurality of patterned holes and grooves for increasing surface adhesion of the non-pressurized fluid reactant and flow of the fluid.

Respectfully submitted,

Date: December 28, 2004

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Docket No. 58027-011100

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